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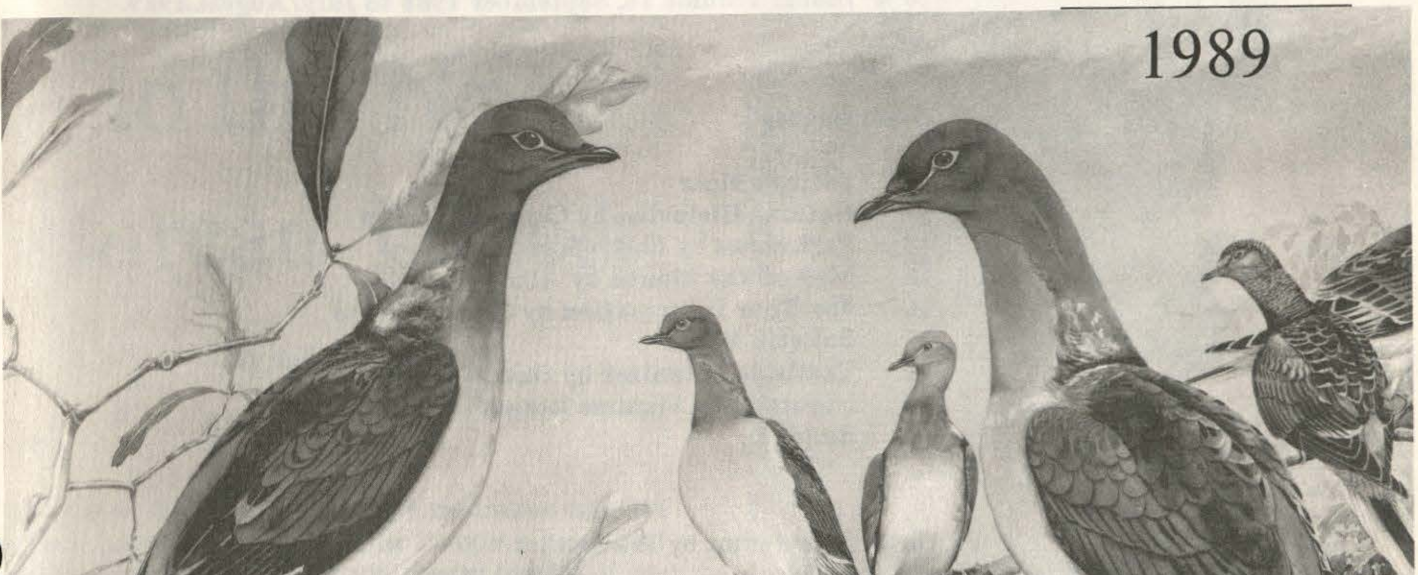
CONNECTICUT ENVIRONMENT

The Citizens' Bulletin of the Connecticut Department of Environmental Protection

September 1989



Remembering the Passenger Pigeon

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Commissioner
Leslie Carothers
Director Info & Ed
William Delaney
Editor
Robert Paier
Contributing Editor
Alan Levere
Graphics
Rosemary Gutbrod
Composition
Caryn Furbush
Circulation
Olive Tyghter
Business Manager
Donna Fadoir

Phone
566-5524

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Editor's Note

Recently, a *Connecticut Environment* reader phoned in and asked for advice in regard to an environmental problem. Big development was coming into an area that had previously been pretty much an untouched source of natural beauty, and this reader wanted some help. The situation was rapidly becoming a personal and environmental nightmare. It is, may I say, flattering in the extreme when a reader feels able to call in to this magazine with problems like that. It means that we are doing our job.

The caller was an intelligent, concerned, environmentally-aware person -- one of many in good old Connecticut. But, and also like many, her understanding of these things had up to that point been largely theoretical. This was, I think, the first time she had actually gone to war on an environmental issue that was important to her. This issue was immediate, it was something she could see and feel, it was real. And, because she was at this hands-on level for the first time, she said this: "Sometimes I just feel like crying."

Correct. That is the correct and appropriate response. If you are looking honestly and clearly at this world, if you are concerned about what is being done to the air, the water, the creatures of this earth, if you are in touch with your sacred human heart and conscience, then you will feel like crying. Tears are right and necessary here.

To that reader, then, we say thank you for your tears.

But we must go on from there. Then we work and struggle and keep trying. The tears are the beginning -- not the end -- of what we do. R.P.

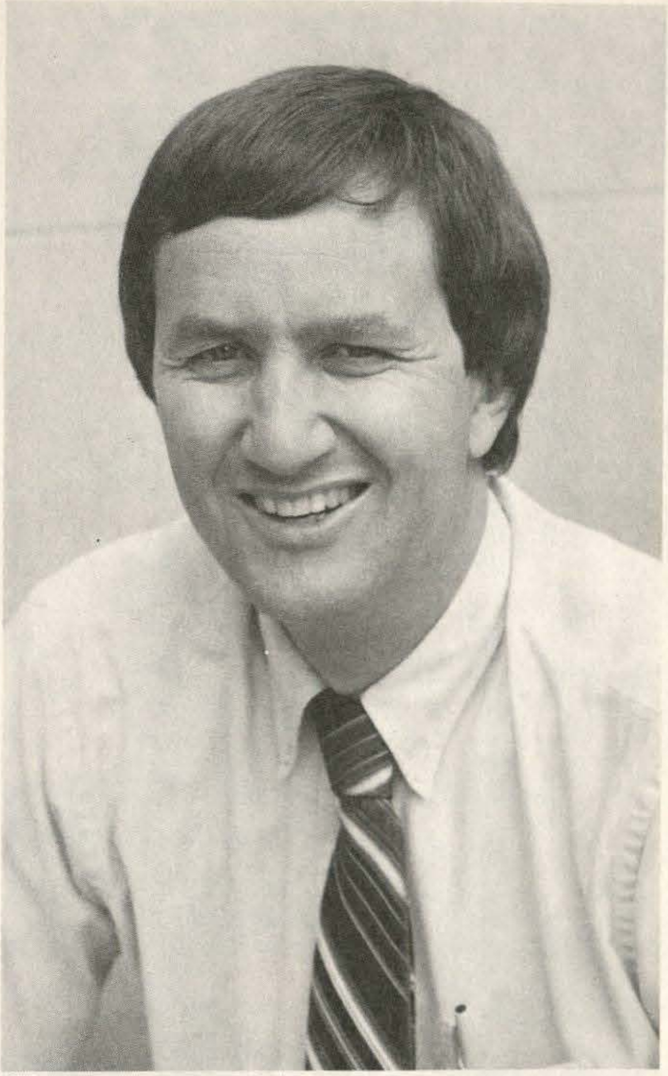
Congratulations to the New Bureau Chiefs

by Robert Paier

On July 18, 1989, after a long and meticulous selection process, DEP Commissioner Leslie Carothers announced seven appointments to the newly-created position of bureau chief. These new positions reflect a reorganization of the DEP which will better enable the Department to respond to the growing environmental challenge in Connecticut.

"Five of these appointees," stated Commissioner Carothers, "are veteran managers whose talents and commitment to DEP's mission are well known. The two new people bring diverse environmental and governmental backgrounds to the Department and will help to strengthen the ties between the regulatory and resource managment work of the DEP."

To the new bureau chiefs, then, we at the DEP say congratulations and welcome. We look forward to working together, to growing together, and to achieving a cleaner and more beautiful state of Connecticut for present and future generations.

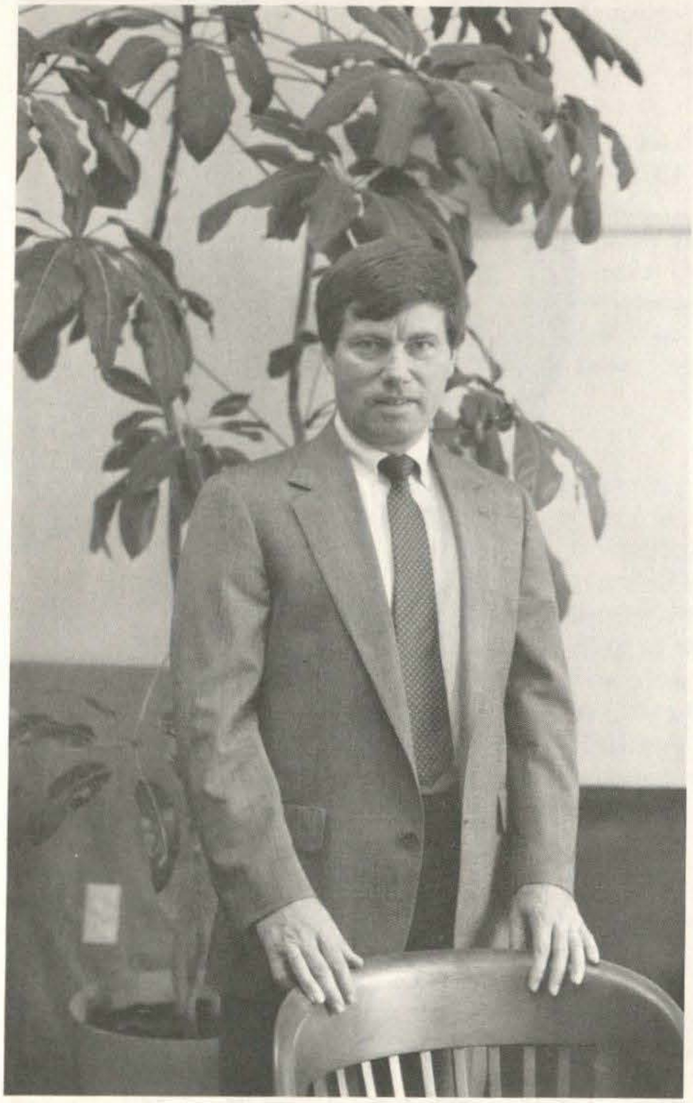


Richard Barlow, Chief, Bureau of Waste Management. (Photo: Robert Paier)

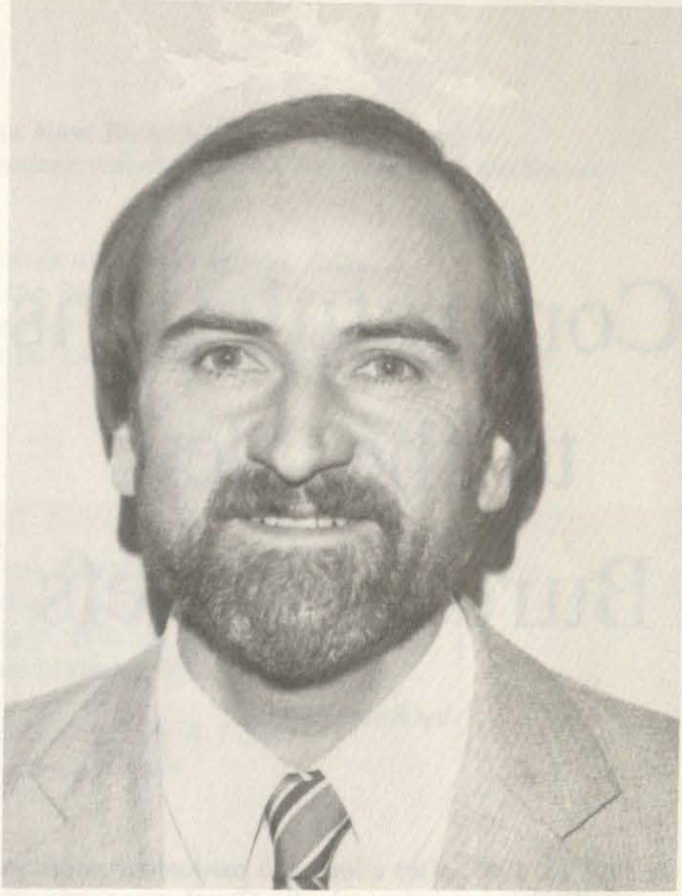
RICHARD BARLOW has lived in Canton all his life. Graduating from Canton High School in 1963, he attended Bucknell University in Pennsylavania. He earned a bachelor's degree in civil engineering in 1967, and then in 1969 he earned a master's degree in sanitary engineering from Penn State University.

Barlow joined state service in 1968, serving as a sanitary engineer for the Water Resources Commission. With the DEP's Water Compliance Unit, he was steadily promoted, and in 1976, he was named assistant director of that unit. In 1984, he became director.

Barlow sees the new position of bureau chief of waste management as one which will be at the forefront of the DEP in the next five to 10 years. "There are a number of evolving programs centering around waste issues, particularly hazardous waste cleanup and recycling, which will be part of the challenge in the coming years," says Barlow. "The DEP will be committed to addressing these issues." ■



Richard Clifford, Chief, Bureau of Parks and Forests. *(Photo: Rosemary Gutbrod)*



Adrian Freund, Chief, Bureau of Water Management.

RICHARD CLIFFORD was born in Torrington. He attended public schools there, after which he attended Wentworth Institute in Boston, where he received an associate degree in engineering. He went on to study landscape architecture at the University of Massachussets at Amherst, receiving a bachelor's degree in 1970.

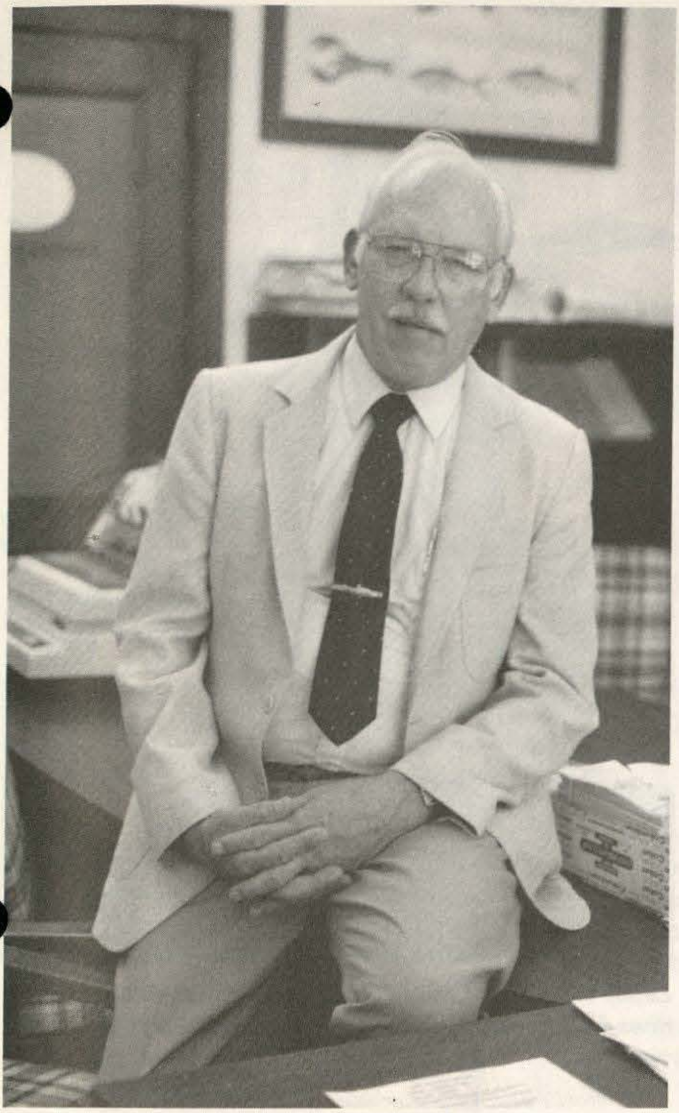
Immediately after graduation, Clifford came to work for the state of Connecticut's Park and Forest Bureau. In 1972, with the creation of the DEP, he was assigned to the newly-formed Office of State Parks and Recreation. In that unit, Clifford was involved in planning and design until 1981, when he was promoted to the position of assistant director. In 1984, he was named director of the unit.

Clifford perceives the new position of bureau chief as a reflection of a more efficient approach to overlapping areas. "There is," says Clifford, "a natural compatibility between the management objectives and public use of parks and forests in Connecticut." ■

ADRIAN FREUND is the new chief of the bureau of water management. Freund comes to the state of Connecticut from Austin, Texas, where he has been acting director of that city's Resource Management Department. In that capacity, Freund directed a staff of 90 working on conservation of water, energy, and habitat for the city.

Freund earned a degree in urban planning from the University of Illinois in 1972, and following that he began a career in environmental positions of increasing complexity and responsibility. Among those were: transportation coordinator, Springfield, Illinois; program manager, water quality management planning, Rockford, Illinois; senior environmental planner, Madison, Wisconsin; acting chief environmental officer, Austin, Texas; and deputy director, Department of Environmental Protection, Austin, Texas.

Among Freund's many professional affiliations is his current directorship of the American Planning Association. ■

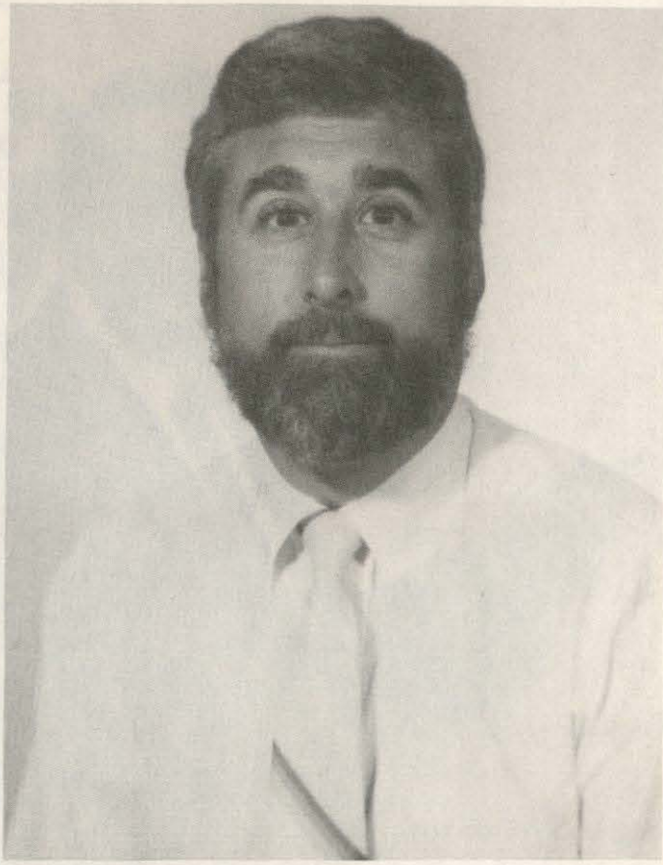


Robert A. Jones, Chief, Bureau of Fisheries and Wildlife. (Photo: Rosemary Gutbrod)

ROBERT A. JONES was born in Manchester. He attended public schools there, and graduated from The University of Connecticut in 1952 with a bachelor's degree in Fisheries and Wildlife Management. He went on active duty as an officer in the U.S. Army from 1952 to 1954, after which he signed on with the state of Connecticut's Board of Fisheries and Game as a biologist. In 1972, with the creation of the DEP, Jones was named director of the Marine Region, and in 1979 he was named director of the Bureau of Fisheries.

Among his other professional responsibilites, Jones is commissioner and vice chairman of the Connecticut River Atlantic Salmon Commission, and state representative of the New England Fisheries Management Council.

Jones has written and published widely on fisheries management, particularly the restoration of the Atlantic salmon. ■



Carl S. Pavetto, Chief, Bureau of Air Management.

CARL S. PAVETTO is the chief of the new bureau of air management. Pavetto comes to the state of Connecticut from Maryland, where he has been in private practice as an environmental consultant and attorney since 1984.

Among his academic accomplishments are: a bachelor's degree, the University of Pittsburgh; a master's degree in environmental science, George Washington University; doctor of law (specializing in environmental law), George Washington University; master of public administration, The American University.

Pavetto currently provides consulting, training, and legal counsel to government and private clients in all areas of federal environmental regulation. He formerly directed the national environmental enforcement program at the Department of Interior, governing operations on public lands. He also served as an environmental manager in the National Oceanographic and Atmospheric Administration of the Department of Commerce. In that capacity, he worked in the areas of coastal zone management, seabed mining, and development of marine sanctuaries.

"Connecticut has a wonderful quality of life to protect," said Pavetto, "and it needs strong environmental programs to do the job. I look forward to meeting the challenge of providing that protection as one of DEP's new bureau chiefs." ■

Hugo F. Thomas, Chief, Bureau of Environmental Services. (Photo: Caryn Furbush)

HUGO F. THOMAS, state geologist and director of the DEP's Natural Resources Center, has earned nationwide recognition as one of the country's leading environmentalists. He brings to the new position of chief of environmental services a rich academic and management background.

Born in Newark, New Jersey, Thomas attended Upsala College, Miami University (Ohio), and the University of Missouri, where he earned a doctorate in geology in 1964. He was an assistant professor and then associate professor of geology at The University of Connecticut until 1972, when he was appointed state geologist and director of the DEP's Natural Resources Center.

Thomas has received numerous professional honors and distinctions. Among the most recent were: the John Wesley Powell Award from the United States Geological Survey for citizen achievement; an award for distinguished managerial service from the State of Connecticut; and a certificate of special recognition from The Nature Conservancy. Thomas has also published many articles and treatises on geology, groundwater protection, management of natural resources, and other environmental issues. He is also a member of several committees of the National Academy of Sciences. ■

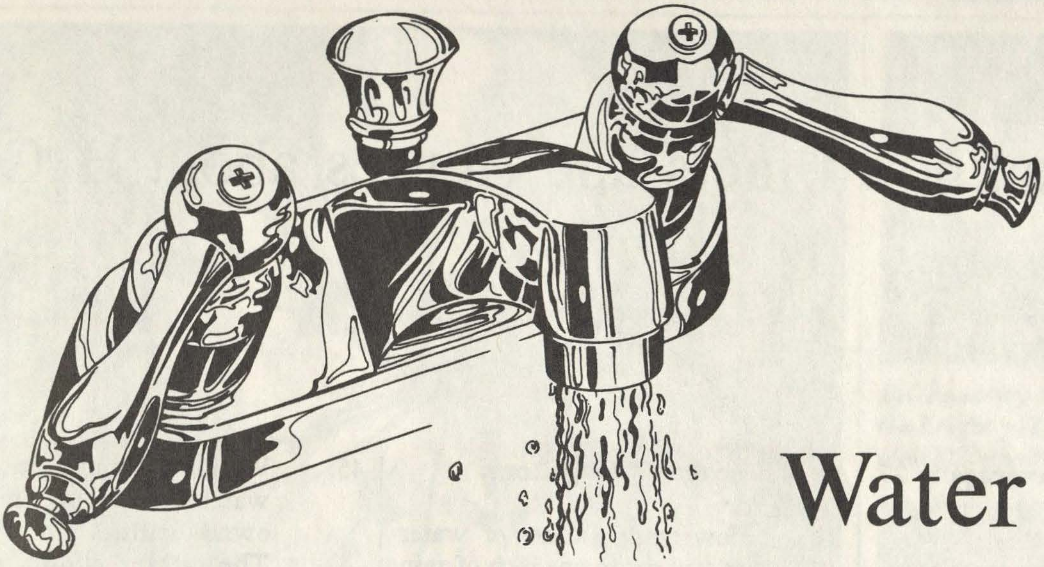
Leslie Whitham, Chief, Bureau of Management Operations and Services. (Photo: Rosemary Gutbrod)

LESLIE WHITHAM is the chief of the new bureau of management operations and services. Born in Bridgeport, Whitham attended high school in Newington, then served for four years in the Air Force, stationed in Alaska and working in motor transportation. After his discharge he enrolled in the University of Maine, graduating with a bachelor's degree in forestry.

Whitham has worked for the state of Connecticut since 1956. He first signed on with the Bureau of Forestry and has steadily risen to positions of higher responsibility. He was promoted to the position of Western District supervisor, again promoted to the position of assistant chief of Operations and Maintainance. In 1981, Les became the director of Division Services.

"My management approach is to treat everyone as an equal, as deserving respect," says Whitham. "I make a conscious effort to maintain a dignified, professional, and friendly relationship with all my colleagues, and I believe that pays off in getting the job done. I see our job here at the DEP as being essential to preserving the quality of life in Connecticut. I am proud to be a part of that mission."

Whitham lives in Farmington. He has been married for 34 years, has three children and one grandchild. ■



Water Trivia

(Reprinted from a publication of the American Waterworks Association.)

1. How much water does it take to process a quarter pound of hamburger? **Approximately one gallon.**

2. How much water does it take to make four new tires? **2,072 gallons.**

3. What is the total amount of water used to manufacture a new car including tires? **39,090 gallons per car.**

4. What are the three forms that water occurs in? **Liquid, solid (frozen), and gaseous.**

5. Water is the only substance found on earth naturally in the three forms. **True.**

6. Does water regulate the earth's temperature? **Yes, it is a natural insulator.**

7. How long can a person live without food? **More than a month.**
   How long can a person live without water? **Approximately one week depending upon conditions.**

8. How much water must a person consume per day to maintain health? **2 1/2 quarts from all sources, i.e., water, food, etc.**

9. How much water does a birch tree give off per day in evaporation? **70 gallons.**

10. How much water does an acre of corn give off per day in evaporation? **4,000 gallons.**

11. How many miles of pipeline and aqueducts are in the U.S. and Canada? **Approximately one million miles or enough to circle the earth 400 times.**

12. What were the first pipes made from in the U.S.? **Fire-charred or bored logs.**

13. How much water is used to flush a toilet? **2-7 gallons.**

14. How much water is used in the average shower? **25-50 gallons.**

15. How much water is used to brush your teeth? **Two gallons.**

16. How much water is used on the average for an automatic dishwasher? **12-20 gallons.**

17. How much water is used on the average to hand wash dishes? **20 gallons.**

18. How many community public water supply systems are there in the United States? **58,900.**

19. How much water do these utilities produce daily? **34 billion gallons.**

20. Of the nation's community water supplies, how many are investor-owned? **32,500.**

21. How much water does the average residence use during a year? **107,000 gallons.**

22. How much does an individual person use daily? **168 gallons.**

23. What does a person pay for drinking water on a daily ba-

A few little known facts and figures about H_2O.

sis? **National average is 27 cents.**

24. How much of the earth's surface is water? **80 percent.**

25. Of all the earth's water, how much is ocean or seas? **97 percent.**

26. How much of the world's water is frozen and therefore unusable? **Two percent.**

27. How much of the earth's water is suitable for drinking water? **One percent.**

28. Is it possible for me to drink water that was in existence during the age of dinosaurs? **Yes.**

29. If all community water systems had to be replaced, what would it cost? **In excess of $175 billion.**

30. What does it cost to operate the water systems throughout the country annually? **Over $3.5 billion.**

31. How much does one gallon of water weigh? **8.34 pounds.**

32. How many gallons of water would it take to cover one square mile with one foot of water? **1.1 trillion gallons.**

33. How much water is in one cubic foot? **7.84 gallons.**

34. How many gallons of water do you get in one inch of rain per square mile? **17.4 million gallons -- or almost the equivalent of all consumptive use of water in Washington, D.C., for one day.**

35. At what temperature does water freeze? **32 degrees F., 0 degrees C.**

36. At what temperature does water vaporize? **212 degrees F., 100 degrees C.**

37. What is the most common substance found on earth? **Water.**

38. How much of the human body is water? **66 percent.**

39. How much of a chicken is water? **75 percent.**

40. How much of a pineapple is water? **80 percent.**

41. How much of a tomato is water? **95 percent.**

42. How much of an elephant is water? **70 percent.**

43. How much of an ear of corn is water? **80 percent.**

44. How much of an earthworm is water? **80 percent.**

45. Who determines consumer water rates for investor-owned utilities in most states? **The state public utility commission.**

46. How much water does it take to process one chicken? **11.6 gallons.**

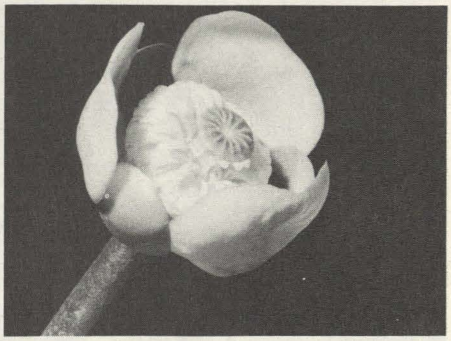
47. How much water does it take to process one can of fruit or vegetables? **9.3 gallons.**

48. How much water does it take to process one barrel of beer? **1,500 gallons.**

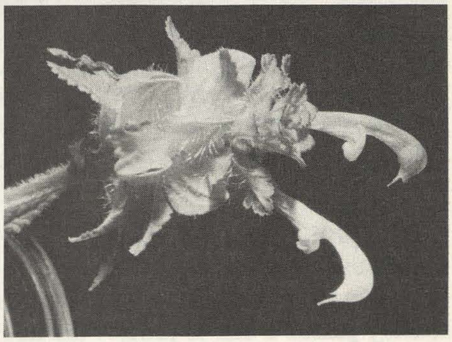
49. How much water does it take to make one board foot of lumber? **5.4 gallons.**

50. How much water does it take to make one pound of plastic? **24 gallons.** ■

One of Connecticut's wild geraniums, Bicknell's cranesbill (Geranium bicknelli).



Bullhead lily (Nuphar variegatum) *is the bright yellow pond lily common on many Connecticut lakes and ponds.*



Swamp lousewort (Pedicularis lanceolata) *is found in wet meadows.*

A Few Beautiful Reasons Not to Cut the Grass

by
Carl W. Rettenmeyer
Director, Connecticut State Museum
of Natural History

(Note: This article is reprinted with permission of the *Norwich Bulletin.*)

SEVERAL OLD-TIMERS have told me that last spring was the most beautiful spring they'd seen in Connecticut for 50 years. Because of the exceptional rains, vegetation in yards and along roadsides has become luxuriant and masses of wildflowers have been allowed to bloom.

I hope that the beauty of these wildflowers will convince those who prefer manicured lawns and neatly mowed roadsides that there are benefits from minimal maintenance mowing. Many beneficial and beautiful plants will thrive, if we leave them alone.

I also hope that each of us will not only appreciate this spectacular display, but also take the next step and become committed to preserving our native species so our children and grandchildren may also enjoy such a spring in the future.

IT'S REALLY SO EASY TO HELP preserve our natural world. The first step is to leave growing things where we find them. Therefore, pick them only when absolutely certain that they grow abundantly in many places.

Plants need time after flowering to produce well-developed seeds. Seeds or the pods of fruits that enclose them may not be as colorful as blossoms, but they have their own special beauty and shapes that rival those of the flowers. The dried stalks are often highly prized for floral arrangements and wreaths. And for those who must mow, saving species is the perfect excuse to procrastinate.

True appreciation for our native plants can best occur by education and exposure. Unless we know what to look for and where to look, most of our wild plants will never be recognizable. So take advantage of nature walks at the state's many nature centers and state parks. Read the excellent field guides to wildflowers with their color pictures and illustrations, and take them on walks. Join organizations where members will share their knowledge and enthusiasm. Stop to smell the roses.

There is growing evidence that Connecticut is becoming aware of the

One of the more rare plants exhibited at the June Wildflower Festival at UConn was yellow rattle (Rhinanthus crista-galli). *The plant is parasitic, obtaining its nutrients from the roots of other plants, and the seeds rattle when mature.*

need to preserve its native species and their habitats.

In recent months, the General Assembly passed a bill to protect the native species of plants and animals in Connecticut which are endangered or threatened with extinction. To learn more about native plants, 2,000 people came to the Wildflower Festival in June at the Connecticut State Museum of Natural History in Storrs. And wildflower walks have been offered by most of the nature centers in the state.

The State Department of Transportation has started planting wildflowers along a few highways. I hope that everyone will applaud and support this new approach, which will save tax dollars. It requires less mowing, thus offering economic as well as aesthetic and environmental benefits.

Articles about the burdens of lawn mowing and the advantages of wildflower meadows are beginning to appear in major newspapers. I have a yard with a mowed lawn, so I can testify that lawns are boring and require much more care than most kinds of natural meadows or other vegetation. I've put much of my yard into natural, unmaintained plants.

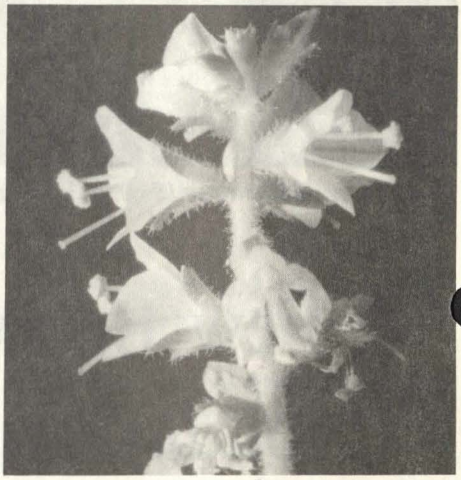
Native species usually grow best in their natural habitats, surviving the inevitable years of drought and flooding. Best of all, they "do their thing" without the assistance of man, which means they do not need fertilizers and pesticides to thrive. The costs of these chemicals are examples of how natural meadows can save money.

The mixed vegetation of meadows includes many legumes which supply nitrogen to soils to the benefit of other plants. In addition, mixed species provide a diversity of foods for a great variety of birds and butterflies.

ECOLOGISTS have long known that monocultures (one or a few species) are most damaging to soil and most susceptible to disease or plagues of insect pests. Promoting diversity of plants, like diversity of people, can improve the long-term survival of all the species.

Scientists still need to learn many details about the growing conditions and interrelationships among the 2,500 species of vascular plants growing in Connecticut. We do know that those thousands of plants are the products of millions of years of evolution, with each species having unique genetic properties. If we can keep these native species surviving, it is undoubtedly true that future useful products will be developed, based on these plants.

If any of these plants become too rare, reproduction may be eliminated, and the species may become extinct in Connecticut. Such permanent losses are occurring frequently today in tropical forests, with vast uncertainties and concern by scientists for the future of the planet. Many of us in Connecticut have condemned such losses in Latin American countries, but we cannot do so with a clear conscience if, simultaneously, we condone or permit destruction of our own native habitats and species.



Common speedwell (Veronica officinalis) *has pale lavender flowers about 1/5th inch wide.*

This article was contributed by The Connecticut State Museum of Natural History at The University of Connecticut in Storrs, which exhibits mounted birds of Connecticut, the largest mounted white shark on display in the eastern United States, "Videoplace" interactive video, Indian artifacts, and offers programs for teachers, children, and adults. For information, contact the Museum, UConn Box U-23, Storrs, CT 06269-3023; phone (203) 486-4460. ■

Today not a single passenger pigeon exists. In that is our great loss. (Photo courtesy of The Connecticut State Museum of Natural History.)

Remembering The Passenger Pigeon

THIS YEAR MARKS THE 75TH ANNIVERSARY of the death of the last passenger pigeon. She died in captivity in the Cincinnati Zoological Garden on September 1, 1914.

The species really ceased to exist at the death of the last male passenger pigeon with which that last female could have mated. Ironically, it was learned too late that passenger pigeons could have been easily raised in captivity and would probably have done well in the elaborate captive breeding programs we make use of today.

There are many theories given for the ultimate extinction of the passenger pigeon. Some believe the causes are purely natural, such as wild fires destroying their roosts, the cutting of the forests which fed and were home to the massive flocks, and drowning *en masse* in the Gulf of Mexico and the Great Lakes. Hunting and trapping certainly contributed in great part to the extinction of the passenger pigeon.

In 1913, the Connecticut Geological and Natural History Survey published *The Birds of Connecticut*, written by John H. Sage (J.H.S.) and L.L.Bliss (L.L.B.). Connecticut had its share of passenger pigeon reports, though for the most part, these were reports of migratory birds. The passenger pigeon was really a bird of the Midwest. Some to the details of these reports have come under scrutiny since that time, but we think the flavor and feeling of that era -- an era when one particular species was hovering on the brink of extinction -- is captured in that publication. So, with a sense of sadness and history, we reprint the following extract from the 1913 publication, *The Birds of Connecticut*.

Today, 75 years later, not a single passenger pigeon exists. And that is our great and tragic loss.

PASSENGER PIGEON (*Ectopistes Migratorius*). Formerly very abundant during migrations and occasionally breeding. Now virtually extinct.

The latest definite record we have of the presence of this bird in Connecticut is of one adult male and three young which Mr. Outram Bangs tells us he saw within 30 yards, near Willimantic, early in October, 1901.

Mr. Hoyt informs us the last record for Stamford was that of a female shot there in the fall of 1879; a young male taken by Andrew Bassett near Lake Saltonstall in October, 1882, is the last taken and preserved near New Haven (in coll. of L.B.B.); and a young male shot Oct. 1, 1889, is the last recorded for Portland (in coll. of J.H.S.).

A flock of about 200 doves, some of which were certainly passenger pigeons, was seen by L.B.B. in North Guilford on Sept. 4, 1883; a single bird was seen by him on Prospect Street, New Haven, May 13, 1882, and others in Guilford on Sept. 11, 1883. A pair of very large wild pigeons, believed to be of this species, was seen in East Haven by H.W.F. and L.B.B., May 20, 1893. In Portland, J.H.S. recorded this species April 7, 16, May 13, and Sept. 26, 1887.

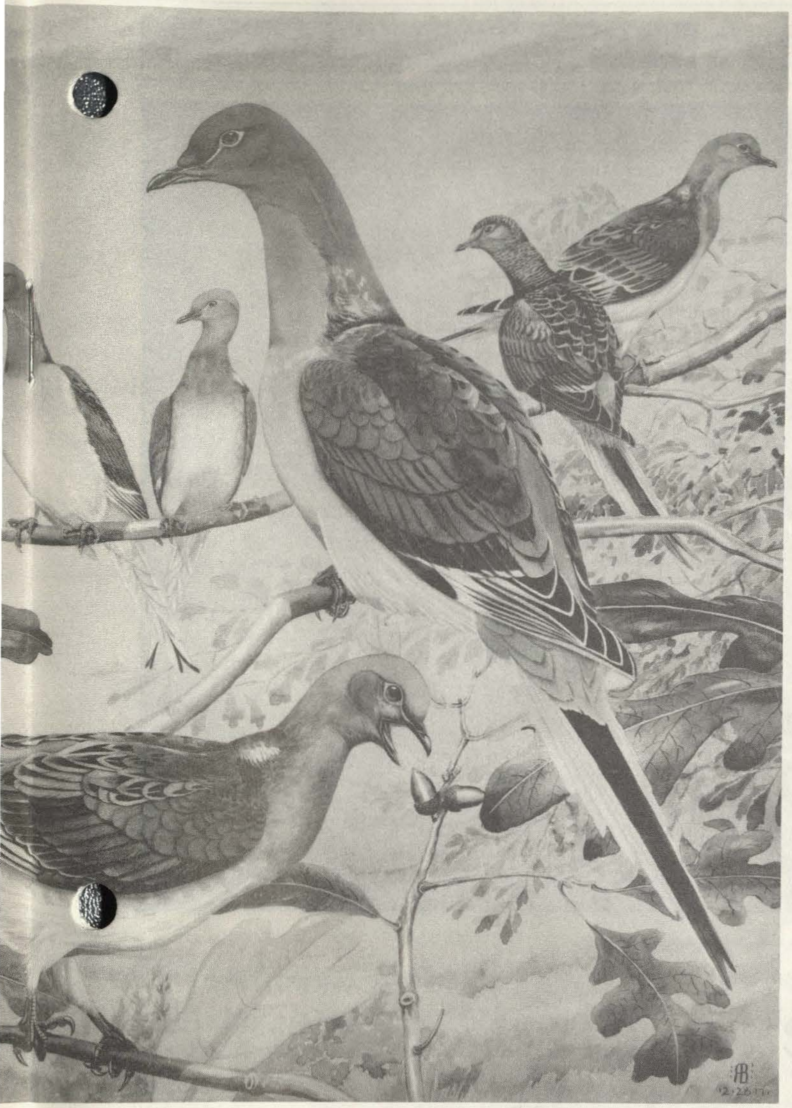
AS TO THE ABUNDANCE OF THE SPECIES at one time, Mr. Henry Townshend tells L.B.B. that his uncles have told him that in the old days it was an easy thing on a "pigeon morning" in September to shoot enough of these birds before breakfast to load a hay-wagon, with the sides on, full to the brim.

"Pigeon mornings" were the cool, frosty mornings of late September and early October. To the top of the highest trees on the summit of the low hills east of New Haven long poles were fastened at an angle of about 30 degrees from a perpendicular, and near the bases of these trees huts of leafy branches were built in such a position that the hunter hiding within could rake the pole with a discharge of his gun. The migrating pigeons would alight on these poles, and great numbers were often killed in the early morning hours. Such pigeon-ambushes L.B.B. well remembers seeing often in the '70s. The pigeons were probably migrating along the coast, and L.B.B. has been told that after stopping for a few minutes on these hills they would fly to the salt-marshes of the Quinnipiac.

Regarding one of the last, if not the last, flight of any size recorded from Connecticut, Mr. Hill writes us: "On the afternoon of September 10, 1876, the writer and William Colfax went to Groton, across the river from New London, to shoot plover or shore birds that usually come along about this time during the fall migration. The wind had been blowing heavily from the northwest for some days. Nearing our destination, we observed flocks of birds circling and hovering over the woods nearby. Investigation and a shot brought to hand birds we thought were and proved to be wild pigeons. We bagged about three dozen, and when we turned homeward we could see flock after flock come along and alight in the woods for food and rest. None flew over the river, for it was near sunset.

"The millions which once darkened the sky with their movin
"Passenger Pigeon."

That evening I made arrangements with Hiram Chappell (still living) to try the pigeons again, and we were on the grounds by daylight next morning, the 11th, and soon the pigeons commenced to fly about, and I shot 96 and my friend as many more. It seemed to us that the whole town, as well as the inhabitants of Groton, were out gunning for pigeons. Old flint-locks, queen's arms, and boys with gun locks tied on with string – any kind of firearm that could kill a pigeon was called into service. The height of the flight was on this day. The large flocks were the most wary, flying high in air, and were made up of many small flocks that had evidently been detached and scattered in quest of food, and when on their way to catch up with the main flight their speed was marvelous. The Thames River, at its mouth, the point where pigeons finally crossed as they flew to the westward, is about a mile wide, and many flocks would easily span this distance by one half or three quarters of a mile wide. The total number of pigeons in this flight was something wonderful and astounding. I shall never forget it. The flight lasted two days. You ask how many pigeons were



g thunder are as last year's appleblossoms." From Rex Brasher's

in the flight? Seventy-five to one hundred thousand. And how many were killed? Remember the shooting was going on on both sides of the river; say 60 shooters averaged 40 or 50 pigeons per man, 2500 per day. Two days, 5000. This is a conservative estimate. Everybody had pigeon pot-pie. As to ammunition, the boys always tell that on the two days the only available shot to be had was buck shot. Ammunition dealers were cleaned out. The crops of the pigeons were filled with acorns. Mr. Chappell and I have gone over the event carefully."

One morning early in the fall during the '70s, possibly at the same date recorded by Mr. Hill, L.B.B. visited Guilford and found the Green strewn with feathers of these birds that had been shot during a flight on the previous day.

ON MAY 6, 1897, A DOVE was flushed by L.B.B. from the borders of a small swamp on the outskirts of New Haven, and to his surprise two eggs were seen lying on a few leaves on the ground in an open space about one foot wide, in a narrow line of alders, that stretched between a small clearing and the swamp. The eggs impressed him as unusually large, and the mourning dove is not known to nest on the ground in Connecticut. A few minutes later the bird was again flushed from the nest, and after flying some distance, showing an unusually white tail widespread, as it flew, returned and settled in a tree about 30 yards away. There it was watched for some time through powerful opera-glasses; but the light was not very good and the position in which the bird sat not favorable for study. It was evidently either a passenger pigeon or a mourning dove and appeared to be somewhat larger than the latter, and had distinct dark markings near the tips of the outer greater primary coverts. These markings seem to be usually present in female of *E. migratorius* and not in females of *Zenaidura macrour carolinensis*. The bird would not allow a nearer approach; and as the passenger pigeon was practically extinct in Connecticut and had never been known to breed on the ground, L.B.B. decided he was mistaken in thinking the size of the eggs abnormal, and collected them, as they were not far from a well-traveled road. The eggs were well advanced in incubation and one of them slightly nest-cracked. They measure, respectively, 1.52 inches by 1.12 and 1.51 by 1.12. They are evidently either eggs of the passenger pigeon, or eggs of the domestic dove which had been substituted by some one for eggs of the mourning dove. Dr. Charles W. Richmond, who kindly compared these eggs with a series of eggs of the passenger pigeon in the U.S. National Museum, informed L.B.B. that they had more gloss than any eggs of the latter in the collection, but that, as most of these eggs had been taken from the oviducts of birds found in market, this difference was not conclusive. Although there is of course no possibility of certain identification the incident seems worth recording.

An egg in the cabinet of L.B.B. was collected by Mr. A.A. Kellogg of New Haven, in New Hartford, before 1870. It measures 1.43 by 1.03 inches.

In the collection of J.H.S. are two eggs taken by W.W.C. in Portland. One was found May 29, 1873, the male pigeon being on the nest and afterwards shot and mounted; the other, June 6, 1875. J.H.S. saw the latter nest, which was on a small tree and not over 10 feet from the ground.

Mr. G.L. Hamlin writes that they formerly bred commonly near Neversink Pond. Near Bethel he knew of their last nesting in 1874, the nest being in a swamp maple near the edge of a small tract of woodland; but the young birds were taken from the nest by a Cooper's hawk, and that was seen by his father. In September, 1880, he saw the last large flock, some 500 birds. In August and September, 1892, a flock of seven frequented a field of buckwheat near his home in Bethel for about a month and one bird he shot was in full moult, and therefore not preserved. A single bird was seen by him in 1893, and no more until September, 1902, when for some time a flock of 27 frequented a field of buckwheat and new-mown rye. Of this flock, all he was able to secure were the feathers of wings and tail of one that had been killed by a hawk. ■

An early morning canoe ride at Hopeville Pond.

Enjoying the Magic of Hopeville Pond State Park

Text and Photo
by
Robert Schneiders
Environmental Intern

RALPH WALDO EMERSON wrote, "Nothing is great but the inexhaustible wealth of nature." If you haven't connected with thoughts like that in a while, take a ride to Hopeville Pond State Park in Griswold, Connecticut. You won't be disappointed.

Hopeville Pond is a 554-acre park, offering camping, boating, fishing, hiking, field sports, or sunning and swimming. If you're an early riser, sunrise is really the perfect time to take a dip in the refreshing waters of Hopeville Pond (really a small lake). If you're lucky, you may get to share the solitude and quiet of the morning with one of the many raccoons or deer who spend most of the day in the protective woodlands of the park. You might want to take a minute to gaze out over the pond and imagine what it must have been like to discover the area for the first time.

If you like hiking, you won't want to miss Hopeville's educational and beautiful nature trail. It takes about 30 minutes to walk and is accessible from many areas in the park. Make sure to stop by the park office before you go so that you can get a copy of their nature trail guide. It will provide you with bits and pieces of information about each of the 16 check points. My favorite was checkpoint nine, the lily pond. Each shiny pad was covered with a radiant white flower. The scenery was magical. Or if you're a hiker who prefers a less beaten path, Hopeville offers many other, less frequented, trails as well.

Activities: Freshwater fishing, swimming, boating, field sports, camping, hiking, picnicking, nature trail.

Services: Concession, flush toilets (handicapped), paved parking (handicapped), change houses, drinking water, participant emergency stop-over program, boat launch ramp.

Directions: 3 miles east of Jewett City on Route 201, off exit 86, off Route 52.

Charge: Weekdays, $1.00; weekends and holidays, $2.00/car. ■

Map of the Month

On Ending with a Comma

by

Alan Levere

Senior Environmental Analyst

IMAGINE READING A BOOK, enjoying it all the way through. Finally, you get to the end and discover that it ends in a comma.

How could that be? Is this finished or isn't it? Is there more, does it go on, do I have the complete version?

Today, this would at best be frustrating; as good as the book was, you would still have nagging questions. We have a map like that; it ends in a comma.

THE GROUND WATER *Availability in Connecticut* map is one of our primary maps regarding potential water sources. It is an incredibly valuable map and is widely used as a reference. It reveals areas of stratified (or layered) sands, silts, and gravels that can yield large volumes of ground water.

Does it show aquifers? Well, by definition an aquifer is any geologic formation that will supply enough water for your needs. The difference is that some aquifers produce vast quantities of water and some only minute quantities.

The highest yields of water come from large deposits of sand, silt, and gravel saturated with ground water. In Connecticut these are usually located in major river valleys. These deposits were laid down in layers by the runoff waters of melting glaciers at the end of the last ice age.

When there is a deep and extensive accumulation of coarse-grained sands and gravels, and it is saturated with ground water, an aquifer can potentially be tapped for water in the millions of gallons per day. Conversely, many bedrock wells yield 3,000 to 4,000 gallons per day (and sometimes less).

This map reveals areas of stratified materials by use of different colors. The colors depict and classify different deposits by the various sized particles that make them up. For instance, there are areas of coarse-grained sands and gravels, and combinations of coarse-, medium-, and fine-grained materials that yield varying amounts of water. In general, the larger the particles, the greater the potential yield. Some of these sand, silt, and gravel deposits are deep and extensive, encompassing several thousand acres. Others are much smaller, only a few acres in size.

While the biggest production comes from the sediments described above, bedrock is still the most commonly utilized source of ground water in the state. An inset map, at a scale of 1:500,000, shows where in the state the highest potential bedrock yields occur. Four different colors reveal the locations and types of rock that are most productive. Yields range from 1,500 to about 400,000 gallons per day.

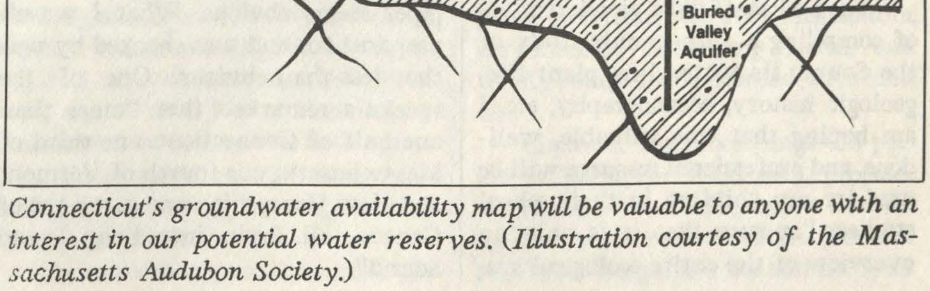
When it comes to dealing with water there is a major point to be considered here. If there isn't enough water available to supply the needs of an intended use, regardless of zoning, that shopping strip, village of condos, retirement community, or what have you, cannot be built. Various local and state regulations would not allow it. Of course, this is not an issue if you are located in a public water supply service area.

This map will prove to be an asset when you inventory your natural resources, do some long range planning, or take a general interest in Connecticut's potential water reserves.

But how does a map end in a comma? Remember, the map cannot be absolutely complete because more areas of stratified drift have become known since the map was printed. Which means that this map features all the known information at the time of printing. Which also means that some areas may have greater potential water assets than this map can indicate. Which means that this map is incomplete; it ends with comma.

THE GROUND WATER *Availability Map* is approximately 44 inches by 55 inches. It was printed in 1978 at a scale of 1:125,000. It is $7.50 per copy.

To order, please include $2.00 for shipping per order, and eight percent Connecticut sales tax (60 cents per map) to: DEP-NRC, Map Sales, Room 555, 165 Capitol Avenue, Hartford, CT 06106. ■

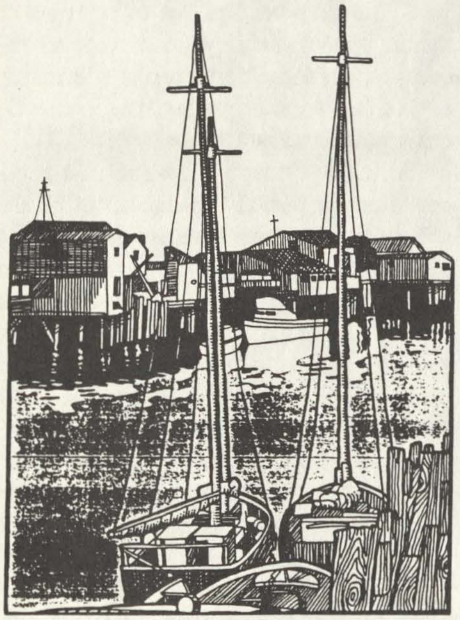


Connecticut's groundwater availability map will be valuable to anyone with an interest in our potential water reserves. (Illustration courtesy of the Massachusetts Audubon Society.)

New wine in old bottles

by

Scott E. Backus



I SPENT A VERY INTERESTING half day in a conference this past May in Meriden. The conference was the Environment/2000 Conference sponsored by DEP. I say that it was interesting. It was also baffling. The subtitle of the conference was "Global, Regional, and Local Environmental Issues" and the focus of the remarks by speakers Commissioner Leslie Carothers, Congressman Bruce Morrison and Arthur Rocque of the DEP was on Long Island Sound. I had only a vague notion of the problems connected with Long Island Sound before this conference and came away with a panoply of printed material concerning this large water body that rests off the foot of my state.

The DEP staff did a wonderful job of compiling a soup-to-nuts study of the Sound: its water life, plant life, geologic history, oceanography, etc. I am hoping that this valuable, well-done, and professional resource will be used by my children in their school studies. I'm sure that it is only an overview of the entire ecological system in the Sound and yet it's one hell of a document for the uninitiated, like myself.

I was "somewhat" aware that a great deal of water empties into Long Island Sound. I was under the impression that "discharges" are "treated water," much the same as the water (effluent) that I am permitted to discharge from my electroplating process. Being a novice at these scientific things (I was an English major in college), I thought (notice I didn't say "assumed") that this effluent from our sanitary sewers was fully treated before its eventual disposal into the Sound. And what do I see on Fact Sheet Number Three? "In areas serviced by sewers, wastewater flows to a local treatment facility, or sewage treatment plant (STP). Currently 44 such facilities discharge over one billion gallons of treated effluent into Long Island Sound every day. Although typical wastewater is over 99 percent water, the remaining one percent may contain substances that are potentially harmful to aquatic life and to us." One percent of one billion gallons per day. Even a idiot like me can calculate that to be 10,000,000 gallons per day (3,650,000,000 gallons per year). That's a lot of junk.

SO, WHERE'S IT COMING FROM? Obviously, from regulated dischargers like my company and other metal finishers. But 10,000,000 gallons a day? Well, then, it must be "sewage wastewater." Sure, that's it. Fecal material from our toilets, and soap and soap products from our washers and laundries. How about oil and petroleum products that wash off our roads with rainwater? Well, nasty stuff entering Long Island Sound via pipes seems obvious. What I wasn't prepared for and was shocked by was the less-than-obvious. One of the speakers remarked that "more than one half of Connecticut, one third of Massachusetts, one fourth of Vermont and New Hampshire, and just a tad of Canada, all drain into Long Island Sound".

Therefore, tons and tons of fertilizers, both industrial and residential, are washed into the surface waters of those states and find a final resting place in the Sound. So, it's the vanity of several million perfect lawns and the weight of millions of dinner tables that are contributing the greater part of the "yuck" that grows the algae that kills the fish that ruins the boating that stops the swimming that lessens the fun that everyone has on Long Island Sound.

No man is an island (no pun on Long Island). Nor is any industry self-sustaining. My management practice alone cannot save the Sound. Neither can the management practices of this metal finisher's organization.

But we can contribute.

I've said this before and I'll say it many more times. We, as an industry, must leap into the future with our medieval science, striving toward zero-discharge. Mr. Larry Foss of Foss Plating in California convinced me that it's feasible. But that's still not enough. We have the resources and the information to put forth to the community (starting with our own employees) to make them realize that zero-discharge can work for them. Household waste is less deadly than industrial waste but there's more of it.

How many of our membership understand that we are under a state law to limit our bulk waste by at least 25 percent by 1991? And how many of you have figured out that this law will extend right into your business? Separating your paper, yet? How about your metal waste – soda cans, lead tape, paper clips? And how about waste minimization and water minimization? My employees work with water works wide open. We are now planning to reduce our water usage by 40-60 percent. With less effluent to clean, I should have cleaner effluent.

(The author is president of the Connecticut Association of Metal Finishers. This article originally apeared in the newsletter published by that organization.) ■

The Bulletin Board

Museum of Natural History

The following events are scheduled for September at The Connecticut State Museum of Natural History at The University of Connecticut, Rt. 195, Storrs, Connecticut.

Saturday, September 16: Hawk watch at Lighthouse Point, East Haven. For all ages; preregistration required. Fees: children-free; members-$4, nonmembers-$6. Call (203) 486-4460 for registration form.

Sunday, September 17, 3 p.m., at the Art Gallery, lower level of Jorgensen Auditorium. Free admission. "Saving Our Migratory Birds," a slide talk by Alexander Gardner, chairman of the Museum's Board of Directors, whose photographs have appeared in the New York Times, The Nature Conservancy magazine, and other publications. Mr. Gardner is the former chairman of the Connecticut Chapter of The Nature Conservancy. The talk will show Connecticut birds, such as the piping plover, the osprey, and migratory birds that travel thousands of miles to different habitats, many of which are threatened by humans, and will explain how humans can help save them.

"One Circle Home" exhibit about Connecticut Indians, mounted birds of prey, "Videoplace" interactive video; mounted sharks, including the largest ever landed in Connecticut – a 15-foot great white shark. Phone: (203) 486-4460 for further information and list of coming events. ■

Alberto Mimo Honored

On June 16, Alberto F. Mimo from the DEP's Information and Education Unit was honored with the Leadership in Education Award. This award is given by the Connecticut Outdoor and Environmental Education Association every year to a person in Connecticut who has demonstrated excellence, dedication, and commitment to the environmental education profession in the state. Mimo has been active in environmental education for more than 14 years since he started as director of the Meigs Point Nature Center at the Hammonasset Beach State Park. Recently Alberto has been involved leading the SEARCH program, a program for high school students to introduce them to environmental research and monitoring techniques. He is also involved in the Community Environmental Education Program (CEEP), a program to bring environmental education and issues to adults. Mimo is a member of the board of directors for the Connecticut Outdoor and Environmental Education Association and Connecticut representative and member of the board of directors of the New England Environmental Education Alliance. ■

Antique Machinery

Members and volunteers of the Connecticut Antique Machinery Association, Inc., have been busy on their grounds in Kent. They expect to have several major projects completed by this year's Fall Festival, slated for September 24, which will run from 10 a.m. to 4 p.m.

One of the largest permanent exhibits, a giant steam engine which was used to power the Tiffany and Pickett Company's woodworking plant in Winsted, will be a special feature at the festival. This magnificent single-cylinder steam engine, with its 12-foot diameter flywheel, ran the woodworking mill from 1904 until the late 1950s. It was donated in 1984, dismantled and moved to storage in Brookfield, and is now almost completely reassembled on its concrete footings in Kent. Total weight of this massive installation, consisting of engine and footings, is 90 tons.

The show is certain to be both entertaining and enlightening for the whole family. So plan to join the fun on September 24 from 10 a.m. to 4 p.m. for the 1989 Fall Festival. For more information, contact Bob Hungerford at (203) 334-2130. Adult admission to the festival is $3.00; children over six years old, $1.50; and under six, free. ■

Conference Proceedings Available

On February 6-7, 1989, the Society of Soil Scientists of Southern New England and the Southern New England Chapter of the Soil and Water Conservation Society (SNEC-SWCS – Connecticut, Massachusetts, and Rhode Island) presented a Geographic Information Systems (GIS) Conference. Broad program sessions were: (1) GIS and Digital Cartography; (2) National and State GIS Activities; (3) Applications of GIS in Southern New England; and (4) GIS as a Management Tool.

Co-sponsors included the USDA-SCS, U.S. Geological Survey, University of Rhode Island Department of Natural Resources Science, Connecticut Department of Environmental Protection, Rhode Island Department of Environmental Management, Massachusetts Executive Office of Environmental Affairs, University of Connecticut Department of Natural Resources Management and Engineering, and the U.S. Environmental Protection Agency. The conference was designed to increase awareness of GIS technology among planning departments and commissions of local and state governments, state legislators, corporations, consulting firms, and utility companies concerned with land use.

Copies of the proceedings (36 pp.) are available for $8.00 each, prepaid. Abstracts of the conference's 20 presentations are included. M.A. Thomas and W.R. Wright are the editors. Send requests and make checks payable to: SNEC-SWCS; P.O. Box 262A, Storrs, CT 06268. For more information call Edward Sautter at (203) 487-4047. ■

Environmental TV Series

Beginning this month, an entertaining and informative series of television programs, produced by Sandra Sprague of WPL-TV in Wallingford, may be seen on public access channels in a number of areas in Connecticut. The program is *Environment*, and is hosted by Bob Paier, editor of *Connecticut Environment* magazine.

Guests will be members of Connecticut's environmental community – environmental professionals, public officials, scientists, biologists, and concerned citizens. *Environment* is a fascinating way to meet the people who are working to keep our state clean and beautiful, and to find out how we all can help to leave things a little better for the future.

Be sure to watch for the following programs:

"Animal Relocation": Skip Hilliker explains how he cares for the wildlife of the state. Week of Sept. 11: MWF 8:00 p.m.

"The Long Island Sound Keeper": Terry Backer describes his job as the eyes, ears, and conscience of Long Island Sound. Week of Sept. 18: MWF 8:00 p.m.

"Between Two Cultures": Indian Affairs Coordinator Ed Sarabia describes the cultural and political complexities facing modern Indians. Week of Sept. 25: MWF 8:00 p.m.

"A Living Tradition": Ed Sarabia offers a rare glimpse of American Indian spiritual teachings. Week of Oct. 2: MWF 8:00 p.m.

The initial broadcast of these programs will be on the following public access channels: Wallingford Cable 33; Telesystems (Meriden, Southington, Cheshire); Valley Cable Vision (Ansonia, Derby, Shelton, Oxford, Beacon Falls, Seymour, Bethany, Naugatuck). ■

Piping Plover Increases

The DEP's Wildlife Bureau announced that a record 34 pairs of piping plovers nested along the Connecticut coastline during the summer. "It is most encouraging that the number of young fledged increased 30 percent, from 47 fledged in 1988 to 61 fledged in 1989," said Julie Victoria, a wildlife biologist for the Wildlife Bureau. "As a result of rigorous habitat protection, this federally threatened species is slowly increasing in Connecticut."

"The Wildlife Bureau appreciates the cooperation of those who respected the fenced and posted areas during the spring-summer nesting season," said Victoria. "With further cooperation next season, we hope that this increase in piping plover and least tern populations will continue." ■

Trailside Botanizer

Nodding Ladies Tresses

by
Gale W. Carter
Illustration by
Pam Carter

PEOPLE ARE OFTEN SURPRISED to learn that nodding ladies' tresses (*Spiranthes cernus*) is an orchid. It doesn't have the same showy qualities that many orchids have. The leaves and flower often blend with its surroundings and it can easily be overlooked.

Nodding ladies' tresses, or Autumn tresses as it is sometimes called, is one of the tallest and more common species of the several that are found in the Northeast. This species may grow up to 24 inches. It has light green basal leaves. They are grass-like and taper toward the base.

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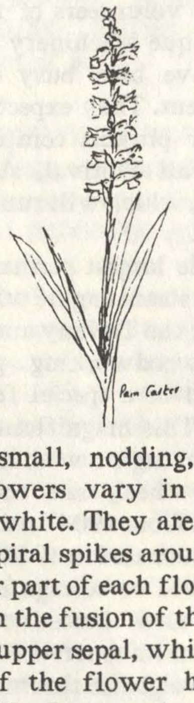

The small, nodding, often fragrant, flowers vary in color from cream to white. They are arranged in rows of spiral spikes around the stem. The upper part of each flower forms a hood from the fusion of the side petals with the upper sepal, while the lower portion of the flower has a wavy marginal lip. It grows in a variety of habitats where the soil is damp, such as open woods, wet meadows, and fields. Blossoming time is from August to October.

The genus name, *Spiranthes*, comes from the Greek meaning "Spiral coiled," a reference to the spiral nature of the flower spike. Its species name, *cernus*, means "nodding." The common name is derived from the fancied resemblance of the coiled flower spike to silken laces, called ladies' tressses, once used by women to adorn themselves.

Pollination in ladies' tresses is of special interest. In orchids, the stamen and pistil are fused to form a column that has a beak (rostellum) at the top. Within the beak is a narrow boat-like disc containing a sticky substance covered by a membrane. When an insect ruptures this membrane, the sticky substance becomes attached to its tongue and the boat-like disc is withdrawn along with the pollen (pollinia). The insect then transfers the pollen to another flower. ■

Don't Miss Pluto

by

Francine Jackson

ON TUESDAY, SEPTEMBER 5, Pluto, usually the most distant planet in our solar system, will be at its closest approach to the sun (perihelion). However, even then, it will still be over 29 and one-half times more distant from the sun than the earth is. At this time Charon, Pluto's only known moon, is (to our line of sight) passing both in front of and behind (transiting and being eclipsed by) Pluto at regular intervals. This is the only time astronomers can discover anything directly about the physical properties of this distant pair of planetary bodies.

Pluto is one of only three planets to be discovered during recorded history. Mercury, Venus, Mars, Jupiter, and Saturn have been known and watched since ancient times. In 1781, William Herschel doubled the size of the known solar system by finding Uranus. The discovery of Neptune came in the 19th century. But, there were problems with the motions of these two planets; both moved in orbits slightly different from their calculated positions, leading astronomers to believe that there had to be yet another body out there disturbing their motions. Finding it was the job of Clyde Tombaugh who, in 1930, observed photographic plates he had taken with the Lowell Observatory telescope in Flagstaff, Arizona. He saw that an exceedingly dim, star-like object within the constellation Gemini, the Twins, moved slightly from one night to the next.

Because of Pluto's great distance from us, very little is known about it. Its path around the sun, although elliptical as all the planets' are, is the most sloping and lopsided. It is inclined over 17 degrees with respect to the ecliptic plane, and although its average distance from the sun is about 40 times the distance between the sun and the earth (defined as one astronomical unit), its real distance can be anywhere from 29.6 to 49.3 astronomical units. When Pluto is at its closest, as it is now, it "cuts through" Neptune's orbit, changing the order of the last two planets from the sun. It did this in 1979 and will stay the eighth planet until the spring of 1999, when it will return to where it belongs.

Because Pluto is very small and so very far away, seeing it is very difficult unless you have access to a telescope of at least eight inches in diameter. Even then, about the only way to verify your sighting is to observe on consecutive nights and try to find one of the "stars" in your field that appears to have moved. You really should try to look for it if you can. Because Pluto is so far from the sun, it travels very slowly – one trip takes about 248 years. If you can't take advantage of this perihelion, you will have to wait until 2237 for the next time. ■

Endnote

(*Prospect Street, Hamden. July 10, 1989.*)

"In man there is success and failure; in nature, in the cosmos, there is not – no success, no failure, no happiness, no unhappiness. With mountains, rivers, plants, and trees, there is no success, no failure. The tree knows no unhappiness or happiness. It simply follows the cosmic order." **Taisen Deshimaru**

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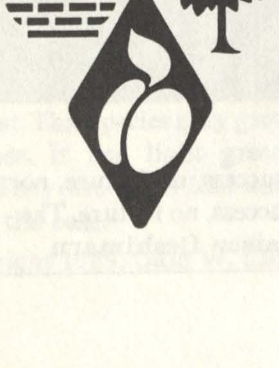

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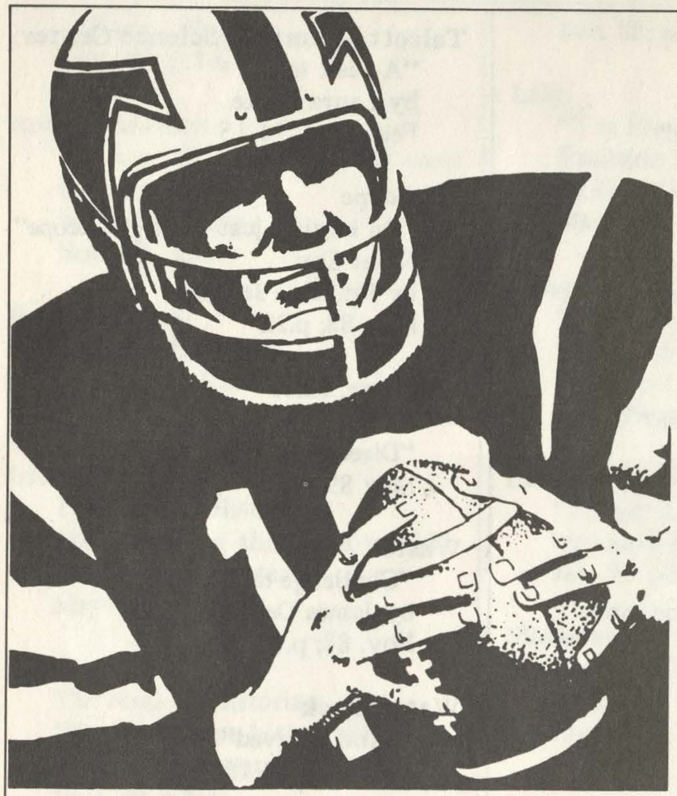

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